

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number  
**WO 2005/067757 A1**

(51) International Patent Classification<sup>7</sup>: **A45B 27/00**

(21) International Application Number:  
PCT/KR2005/000127

(22) International Filing Date: 14 January 2005 (14.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
20-2004-0001015 14 January 2004 (14.01.2004) KR

(71) Applicant and

(72) Inventor: PARK, Yong Tae [KR/KR]; A-402 Daewon  
Apt., 79 Wondae 1-ga, Seo-gu, Daegu 703-031 (KR).

(74) Agent: HAN, Sang Hyuk; Seong Jae B/D 5F, 1656-1,  
Seocho-dong, Seocho-ku, Seoul 137-070 (KR).

(81) Designated States (*unless otherwise indicated, for every  
kind of national protection available*): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

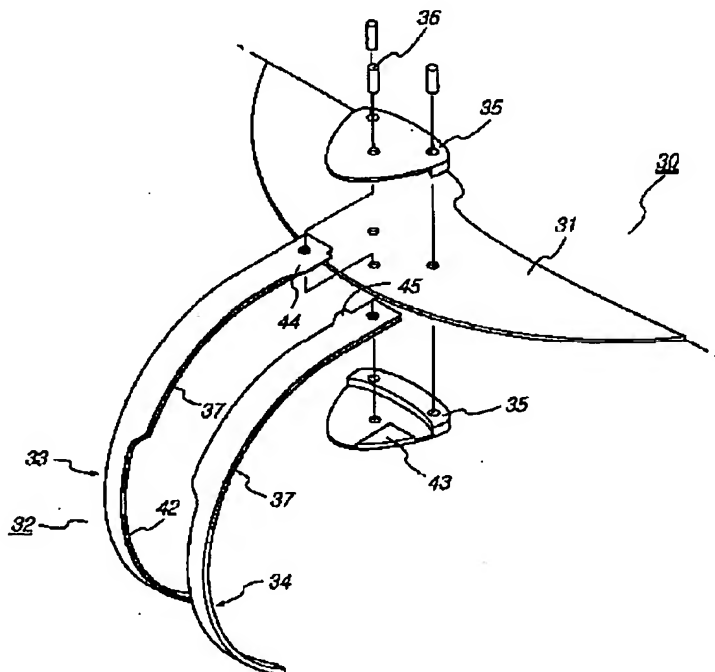
(84) Designated States (*unless otherwise indicated, for every  
kind of regional protection available*): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: HAT IN FAN



(57) Abstract: A hat in a fan that both serve as a hand fan and as a hat is provided by the present invention. A transformable handle made of rigid material comprising of coupled upper and lower handle serves as a grip for the fan for fanning. The said coupled upper and lower handle is disengaged and spread out to serve as a band of a hat so that the upper and lower handle can be used to wear the head of the fan as a visor of a hat to block out the sun light.



WO 2005/067757 A1

1  
8/PARTS

10/550160

JC17 Rec'd PCT/PTO 20 SEP 2005

**Description****HAT IN FAN****Technical Field**

- [1] The present invention relates to a fan, and more particularly, to a hat in a fan that employs a transformable handle made of a rigid material which can be folded or spread out to serve as a grip for a fan and or as a band of a hat. The hat in a fan comprise of a thin plate serving as the head of the fan, and a handle for the fan. The handle comprises of upper and lower handle. The upper and lower handles are in an arc shape, and the said upper and lower handles are coupled together to form a grip of the fan. The coupled upper and left handles are simply disengaged and spread out to serve as a band of a hat, so that the head of the fan can be worn as a visor of a hat over the head.

**Background Art**

- [2] Generally, conventional fan is used to physically incite a wind to cool oneself on summer seasons when the outdoor temperature and the intensity of sun light are high.
- [3]
- [4] Conventional fans can be easily carried and used to incite winds to cool oneself but these conventional fans lack additional functionality other than inciting winds. To block out the intense sunlight, a hat (specially a hat with visor) had to be carried along, in addition to carrying a fan to cool oneself, to block out the sun light.
- [5]
- [6] In order to remedy the difficulty in carrying a fan as well as a hat to stay cool during the summer time, various shapes and forms of a hat in a fan has been developed and used.
- [7]
- [8] The present invention had applied for utility model patent (patent application No. 1998-15587) and below is a brief summary of the content of utility model patent application:
- [9]
- [10] On lower end of a circular thinplate serving as a head of the fan, a rope is connected to the circular thin plate via rope length controller. When the rope length controller is drew near the head of the fan, a long protruding line of the rope stretching from behind the rope length controller can be used as a grip of a fan to incite winds.
- [11]
- [12] When wishing to transform the fan into a hat, rope length controller is drew out

from the head of the fan and the rope can be used as a band of a hat for wearing over the head, and the head of the fan serves as a visor of a hat.

## **Disclosure of Invention**

### **Technical Problem**

- [13] The present invention is made in view of the above problem and it is an object of the present invention to provide a hat in a fan that serve both as a fan and a hat. It is further object of the present invention to provide a handle for the fan that can be folded to form a grip for the fan and spread out to form a band like structure of a hat so that the head of a fan can be worn over the head as a visor of a hat to block out the sun light.

### **Technical Solution**

- [14] In order to achieve above objects, there is provided in accordance with present invention a hat in a fan comprising of a handle made of rigid material that can be folded to form a handle of a fan and spread out to form a band of a hat; a thin plate made of synthetic resin in a circular shape serving as the head of the fan, and the said head of the fan also serving as a visor when the present invention is worn as a hat.

### **Brief Description of the Drawings**

- [15] Fig. 1 is a perspective view of a hat in a fan in accordance with preferred embodiment of the present invention in a fan mode
- [16]
- [17] Fig. 2 is a exploded perspective view of the handle portion of a hat in a fan marked A in accordance with preferred embodiment of the present invention
- [18]
- [19] Fig. 3 is a plane view of the handle portion of a hat in a fan in accordance with the preferred embodiment of the present invention
- [20]
- [21] Fig. 4 of the part marked A is a partial cross-sectional view of the portion marked A-A on Fig 3, and the part marked B is a partial cross-sectional view of the portion marked B-B on the Fig 3
- [22]
- [23] Fig. 5 is a plane view of the handle portion of a head in a fan spread out to serve as a band of a hat
- [24]
- [25] Fig. 6 is a perspective view of a hat in a fan in a hat mode in accordance with

present invention

[26]

[27] Fig. 7 is a plan view of a hat in a fan in hat mode according to another preferred embodiment of the present invention

[28]

[29] Fig. 8 is a plane view of the handle portion of the present invention in accordance with another preferred embodiment of the present invention.

### **Best Mode for Carrying Out the Invention**

[30] Hereinafter, the preferred embodiment of the present invention will be described in detail with reference to the accompanying drawings;

[31]

[32] Fig. 1 is a perspective view of the ahat in a fan in accordance with preferred embodiment of the present invention in a fan mode; Fig. 2 is a exploded perspective view of the handle portion of the fan marked A in accordance with preferred embodiment of the present invention; Fig. 3 is a plane view of the handle portion of a hat in a fan in accordance with the preferred embodiment of the present invention; In Fig. 4 of the part marked A, is a partial cross-sectional view of the portion marked A-A on Fig 3, and the part marked B is a partial cross-sectional view of the portion marked B-B on the Fig 3; Fig. 5 is a plane view of the handle portion of a hat in a fan spread out to serve as a band for a hat; Fig. 6 is a perspective view of a hat in a fan in a hat mode in accordance with present invention; Fig. 7 is a plan view of a hat in a fan in a hat mode according to another preferred embodiment of the present invention; Fig. 8 is a plane view of the handle portion of the present invention in accordance with another preferred embodiment of the present invention.

[33]

[34] A hat in a fan according to the present invention comprise of a thin plate made of synthetic resin materials in a circular shape that serve as the head of a fan 31; a handle 32 is grafted to the lower and central end of the head of the fan 31; the said handle 32 can be transformed to serve both as the handle 32 for the fan and as the band of a hat.

[35]

[36] The said handle 32 comprise of a pair of an arch shaped handles wherein the pair comprise of upper handle 33 and a lower handle 34, and the said upper handle 33 and the lower handle 34 are fastened at the center of the supporting plate 35 by pins 36. The said supporting plates 35 serve as fastening devices, and are placed on top of the surface of the head of the fan 31 and on the underside of the head of the fan 31 by pins

or rivet.

[37]

[38] The said upper and lower handles 33, 34 are further sub-divided into upper plates 38, 39 and lower plates 40, 41 by the slots 37 situated on the upper portion of the handle 32 where the said upper and lower handles 33, 34 are fastened to the head of the fan 31. On the lower portion of the handle 32, slits 42 are situated so that when the handle 32 is folded, the upper and lower handles 33, 34 can both accommodate small portion of the head of the fan 31 into the slits 42.

[39]

[40] The said upper plates 38, 39 are placed on the upper side of the head of the fan 31, and the said lower plates 40, 41 are placed on the lower side of the head of the fan 31 so that the head of the fan 31 naturally positions itself in the slots 37 of the upper and lower handles 33, 34.

[41]

[42] The supporting plate on the underside of the head of the fan 35 comprise of a slip prevention sills 43 so that when the lower portion handle's 33, 34 lower plate 40, 41 is used as the handle for the fan, can prevent the lower handle from slipping out.

[43]

[44] The said upper plate 38,39 of the upper portion of the upper and lower handle 33, 34 situated on the upper portion of the head of the fan 31, further comprise of maintaining sills 44, 45 to maintain the upper and lower handles at the spread out form so that the said upper and lower handles 33, 34 in the said spread out form serve as a band of a hat.

[45]

[46] The said maintaining sill 45 situated on the said upper plate 39 of the lower handle 34, and the said maintaining sill from lowered position is raised by disengaging and spreading out the upper and lower handles 33, 34 to couple with maintaining sill 44 situated on the upper plate 38 of the upper handle 33. It is recommended that the maintaining sills be made of elastic material.

[47]

[48] The above dual functional fan 30 in accordance with provisions set forth by the present invention comprise:

[49]

[50] At initial stage, the upper handle and lower handle 33, 34 are coupled together, and the said handles 33, 34 when viewed from a plane view, forms a unilateral shape (from

side view, the handle forms an arch shape) and the said upper and lower handles 33, 34 can be used to grab the dual functional fan and fan oneself by holding the said coupled upper and lower handles 33, 34.

[51]

[52] The handle 32 comprising of the slots 37 and slits 42 formed on the upper and lower handles 33, 34 32, and the upper plate 38, 39 and the lower plate 40, 41 constituting the said upper and lower handles 33, 34 are coupled together by intercrossing with one another, and this intercrossing allows the handle 32 to maintain unilateral shape.

[53]

[54] The slip prevention sill 43 situated on one side or on both sides of the supporting plate 35 placed on the lower end of the head of the fan 31 keeps the upper handle and the lower handle from easily separating or slipping from each other.

[55]

[56] A hat in a fan when wishing to use the invention as a hat for blocking out the sun light from the present state of a fan;

[57]

[58] By disengaging and spreading out the coupled upper and lower handles 33, 34, the said upper and lower handles 33, 34 are transformed to form a circular band so that the circular band formed by the upper and lower handles 33, 34 can be used to wear the fan as a hat.

[59]

[60] In the said situation, the said upper and lower handle 33, 34 forms a right angle to the center line of the head of the fan 31, so that part of the head of the fan 31 is inserted into the slots 37 situated on the upper and lower handle 33, 34, and this allows the head of the fan 31 to become rounded and act as a visor of a hat.

[61]

[62] When the upper and lower handles 33, 34 are separated and spread out, the force of a user allows the handles to pass over the slip prevention sill 43 situated on the supporting plate 35 located on the lower end of the head of the fan 31.

[63]

[64] When the upper and lower handles 33, 34 are disengaged and spread out, they are spread out as much as they can be so that the maintaining sills 44, 45 placed on upper plates 38, 39 can couple to each other and sustain the handles in spread out state.

[65]

[66] The maintaining sill 45 placed on the upper plate 39 of the lower handle 34 is made of elastic material. The maintaining sill 45 at normal times is hidden behind the upper plate 38 but when the handles are spread out, the maintaining sill 45 frees itself from the upper plate 38 and by the tension and elasticity of the said maintaining sill 45, the said maintaining sill 45 protrudes upwards, and the said maintaining sill 45 couples to the maintaining sill 44 situated on the upper plate 38 of the upper handle 34.

[67]

[68] The hat as mentioned above can be transformed back to a fan by simply pushing on the coupled maintaining sills 44, 45 gently so that the maintaining sill 45 formed on the upper plate 39 of the lower handle 34 can be pushed into the upper plate 38 of the upper handle 33. The upper and lower handles 33, 34 are then folded back into its original shape.

[69]

[70] The present invention, in accordance with another preferred embodiment of the present invention, can use an auxiliary band 50 to attach to the tips of the upper and lower handles 33, 34 so as to prevent the hat from falling off easily.

[71]

[72] The present invention, in accordance with still another preferred embodiment of the present invention, employs pins 55 to fasten the upper handle and lower handle 33, 34 independently, and the portions where the handles are fastened by the pins can comprise of interlocking gears 56, 57 so that the handles can maintain and sustain coupled position when folded.

[73]

[74] Thus there is provided in accordance with the present invention a hat in a fan that accomplishes the objects of the invention set out above. Many modifications of the preferred embodiments of the invention disclosed above will readily occur to those skilled in the art. The invention includes all such modifications as fall within the scope of the appended claims

### **Industrial Applicability**

[75] As described above, a hat in a fan is provided in accordance with provisions set forth by the present invention wherein the handle part of the invention is made of durable material and the said handle can be folded and spread out so that the handle can serve as the grip for the fan so that a user can utilize the grip to fan himself. The handle can also be transformed to serve as the band of a hat so that the present invention can be worn as a hat to block out the sun light. The head of the fan serves as

the visor of a hat.

[76]



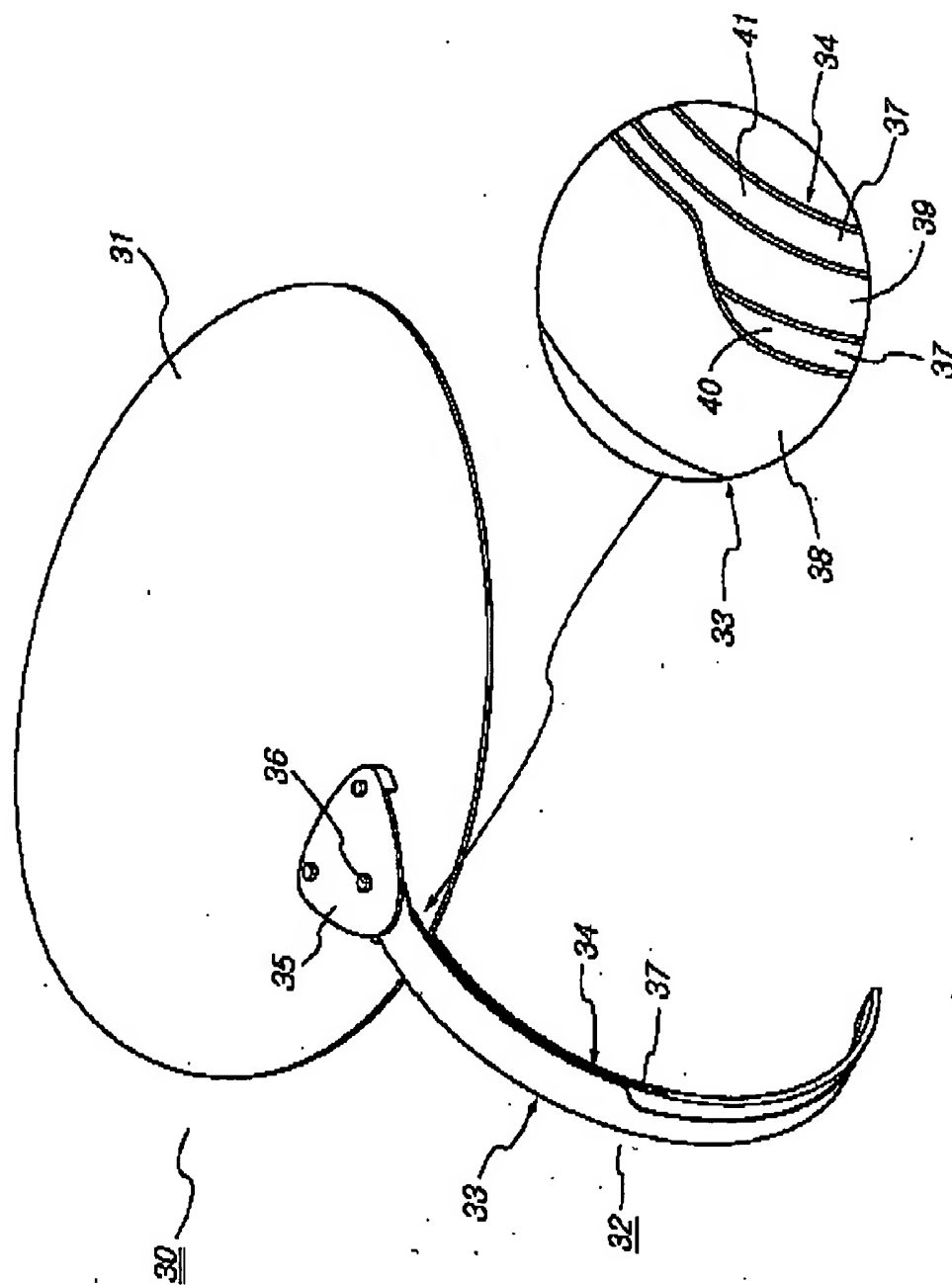
10/550160  
JC17 Rec'd PCT/PTO 20 SEP 2005

## Claims

- [1] A hat in a fan comprising: a thin plate that serve as the head of the fan 31;  
A transformable handle 32 grafted at on center lower end of the head of the fan 31, and the said handle 31 has dual functions as a handle for the fan and as a band of the hat;  
The said handle 32 comprising of arc shaped upper handle 33 and lower handle 34, wherein the two handles are arrested by pins onto the supporting plates 35 on the upper side and underside of the head of the fan 31;  
The said upper and lower handle 33, 34 is subdivided into upper plate 38, 39 situated on upper portion of the head of the fan 31 and lower plate 40, 41 situated on the lower portion of the head of the 31 by the slot 37 comprised on the part where the upper and lower handle 33, 34 are fastened to the head of the fan 31. Slit 42 capable of receiving the upper and lower handle is situated on the lower portion of the said upper and lower handle 33, 34.  
Slip prevention sill 43 is placed on the said lower end of supporting plate 35 so that the lower plates 40, 41 of upper and lower handles 33, 34 do not slip out while the handle is being used as a grip for fanning.  
A sustaining sill 44, 45 is placed on upper plate 38, 39 of the upper and lower handles 33, 34  
The sill on the upper plate 39 of the said lower handle 34 is made of elastic material so that when the handles are spread out, the elasticity of the sill causes the sill to protrude upwards and couple to the sill of the upper plate 38 of the upper handle 33.
- [2] A hat in a fan as set forth in claim 1, wherein the auxiliary band can be attached to the upper and lower handle 33, 34 that comprise the main handle 32, so that when the present invention is worn as a hat the said auxiliary band can prevent the hat from slipping out.
- [3] A hat in a fan as set forth in claim 1, where in the said upper and lower handle 33, 34 are fastened by pins 55 independtly;  
An interlocking gear 56, 57 is placed on the portion where the upper and lower handle couples when the main handle is folded.

[Fig. 1]

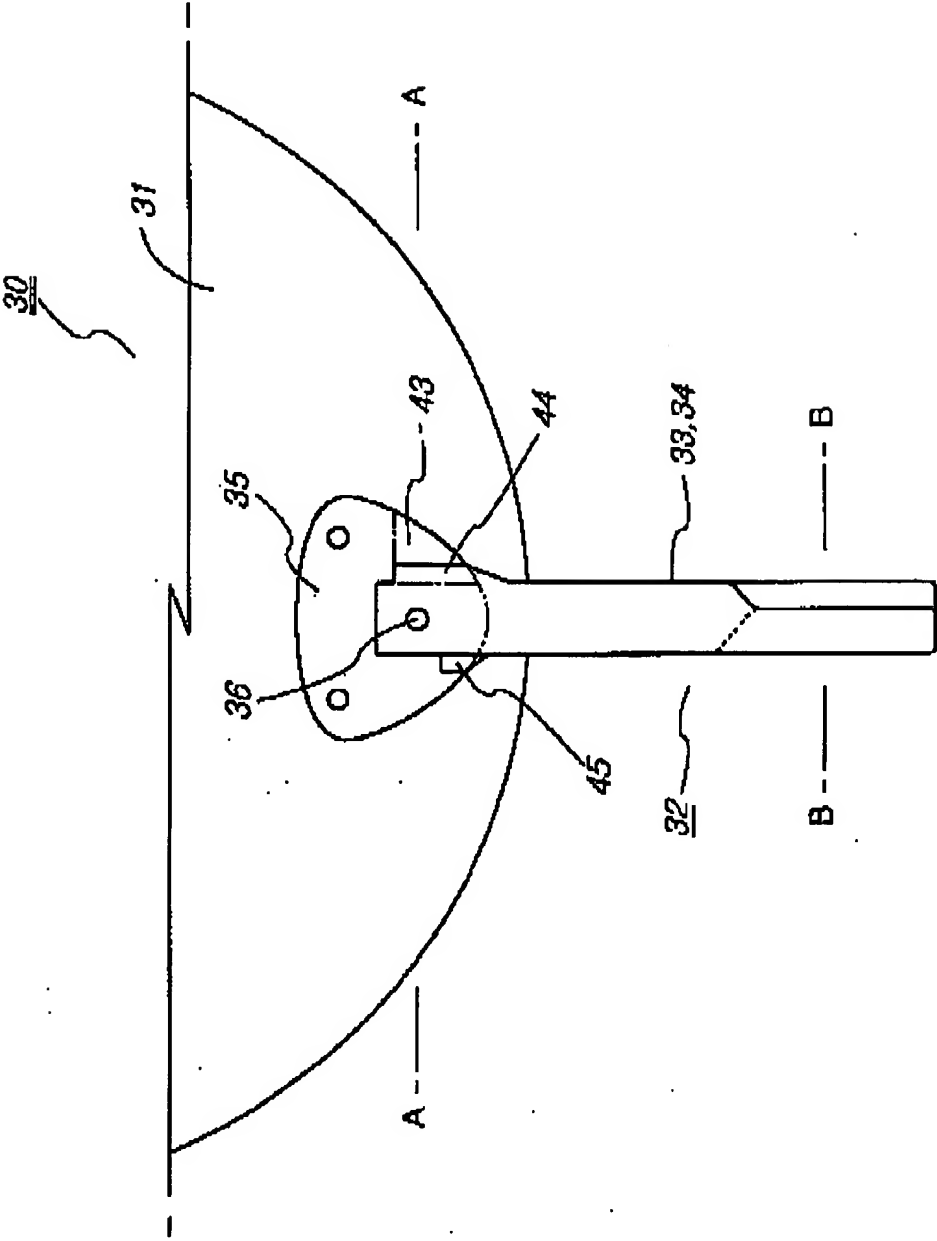
10/550160





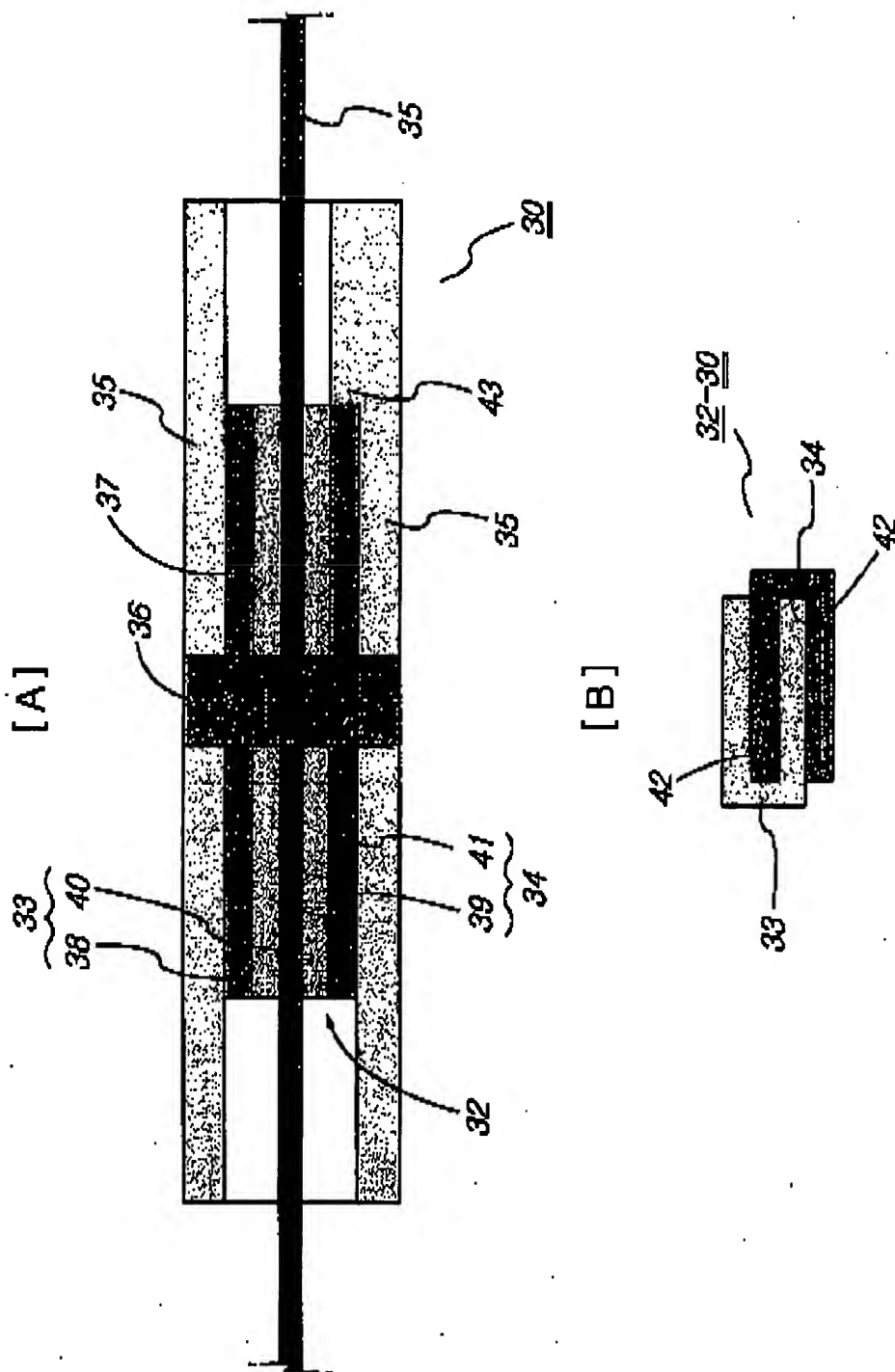
[Fig. 3]

10/550160



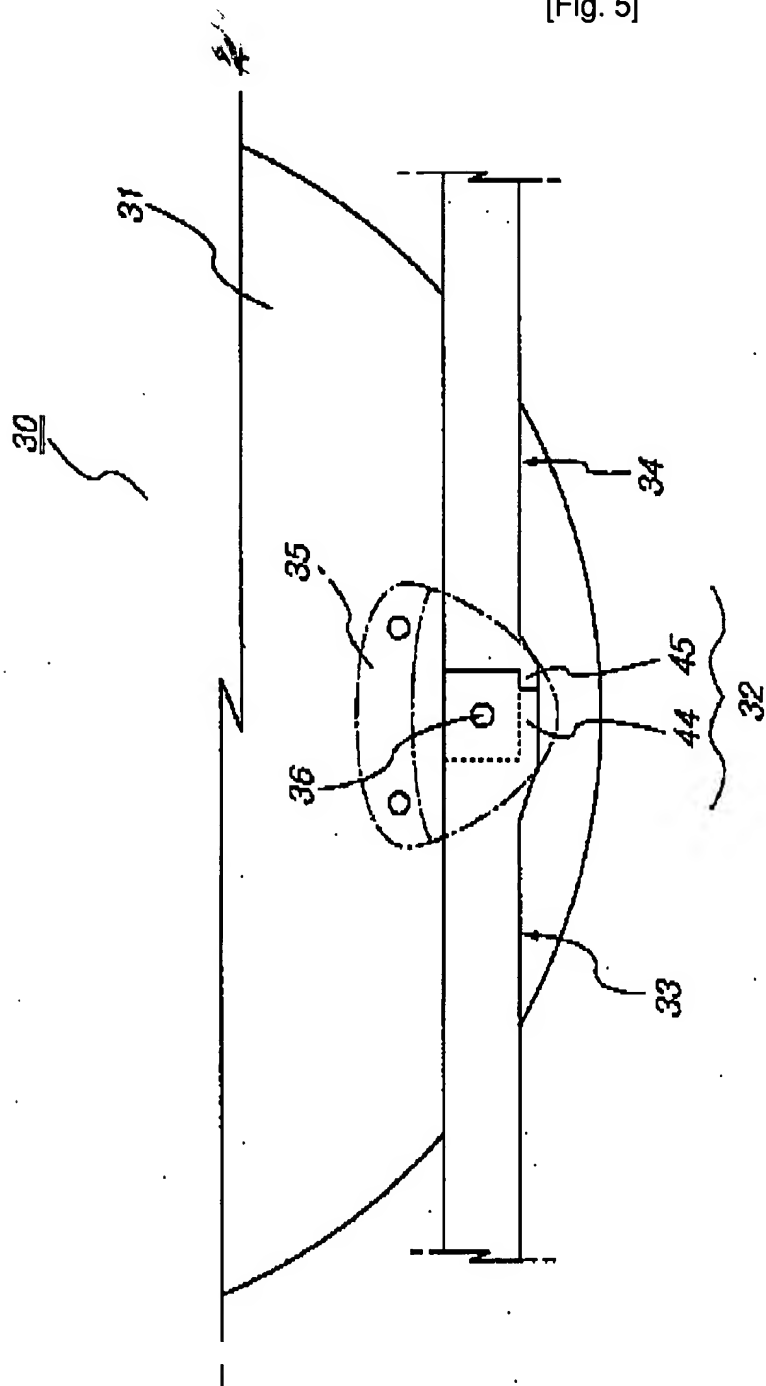
[Fig. 4]

10/550160



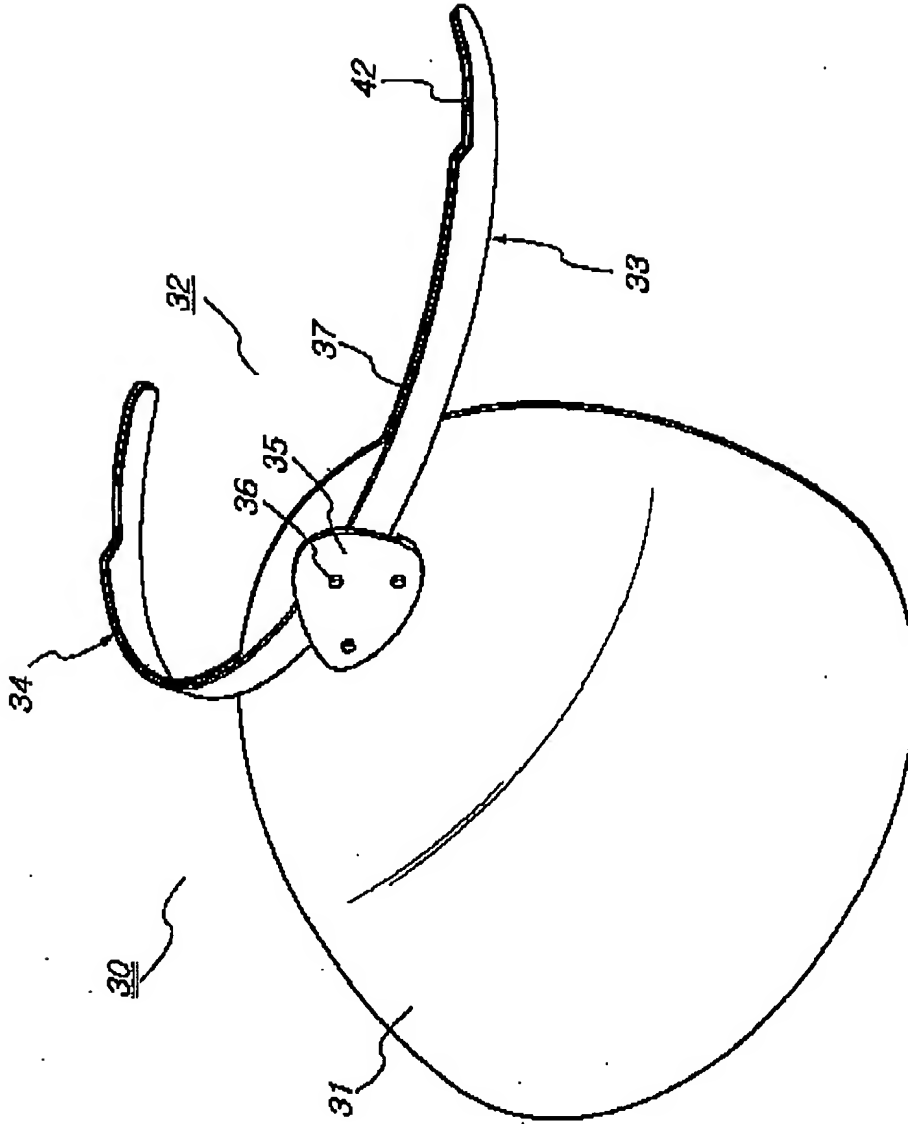
[Fig. 5]

10/550160



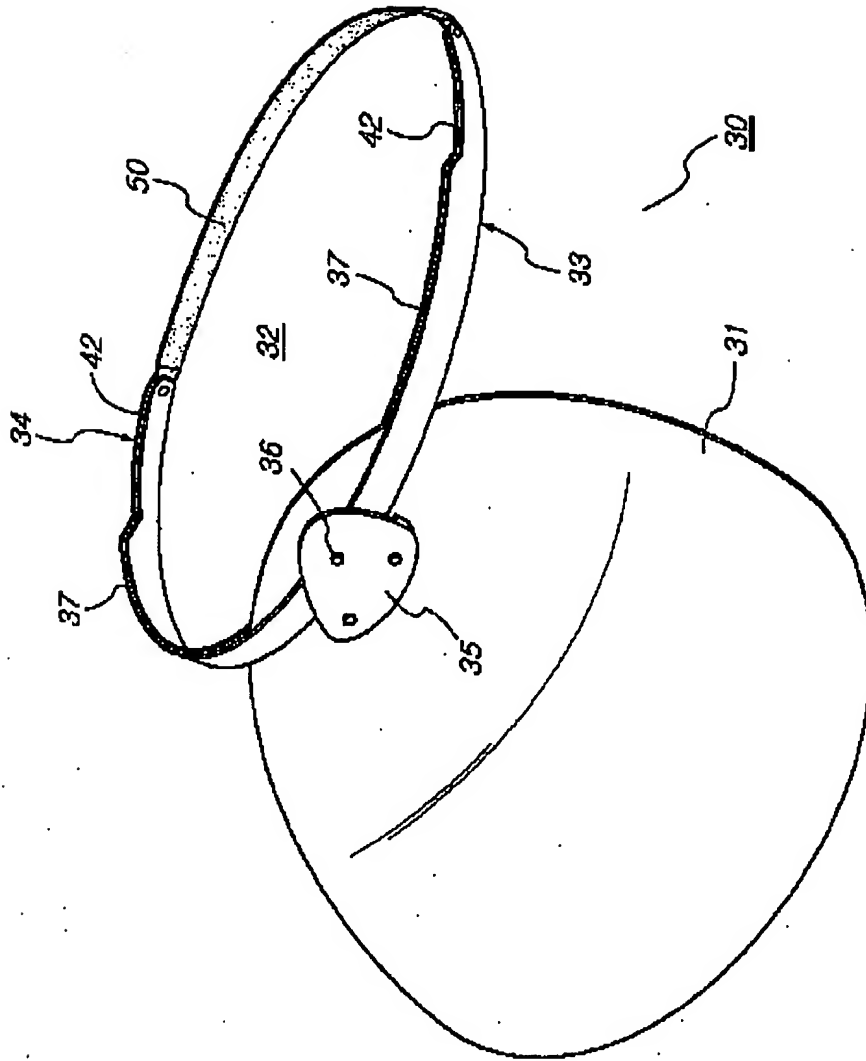
[Fig. 6]

10/550160



[Fig. 7]

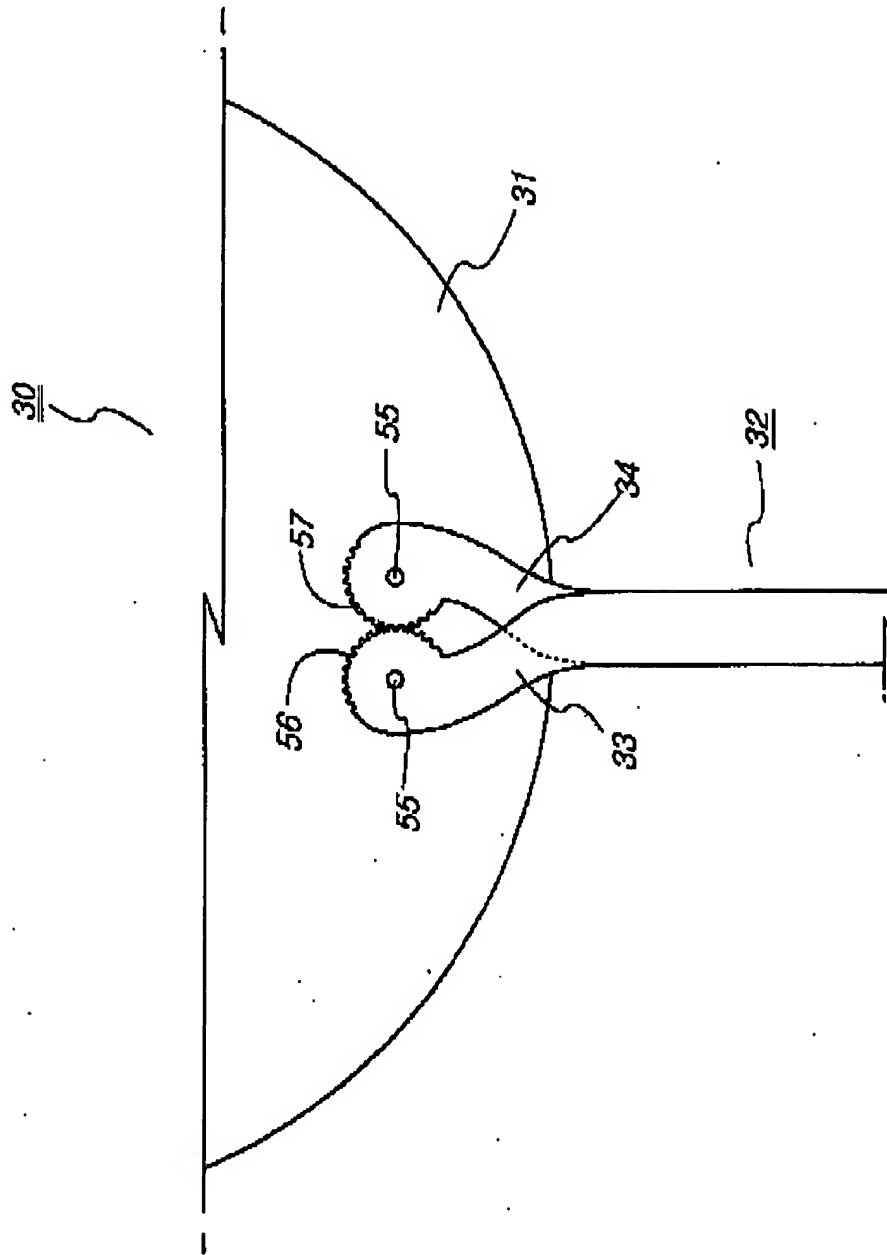
10/550160





[Fig. 8]

10/550160



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2005/000127

**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 A45B 27/00**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7 A42B, A45B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

KR : IPC as above

JP (utility models) : IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 1998-24875 U (KIM, DOO HWAN) 25 JULY 1998 See the whole document	1-3
A	KR 1996-28082 U (SUNG, NAK CHUN) 17 SEPTEMBER 1996 See the whole document	1-3
A	KR 0199235 Y (KIM, KYOO SUK) 02 OCTOBER 2000 See the whole document	1-3
A	JP 3046354 U (ALPS KAWAMURA K.K.) 10 DECEMBER 1997 See the whole document	1-3

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

04 JUNE 2005 (04.06.2005)

Date of mailing of the international search report

**07 JUNE 2005 (07.06.2005)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

MIN, Byong Yug

Telephone No. 82-42-481-5617

